

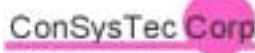


State of Texas  
ITS Architectures and Deployment Plans  
**Childress Region**

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## Executive Summary

*Prepared by:*



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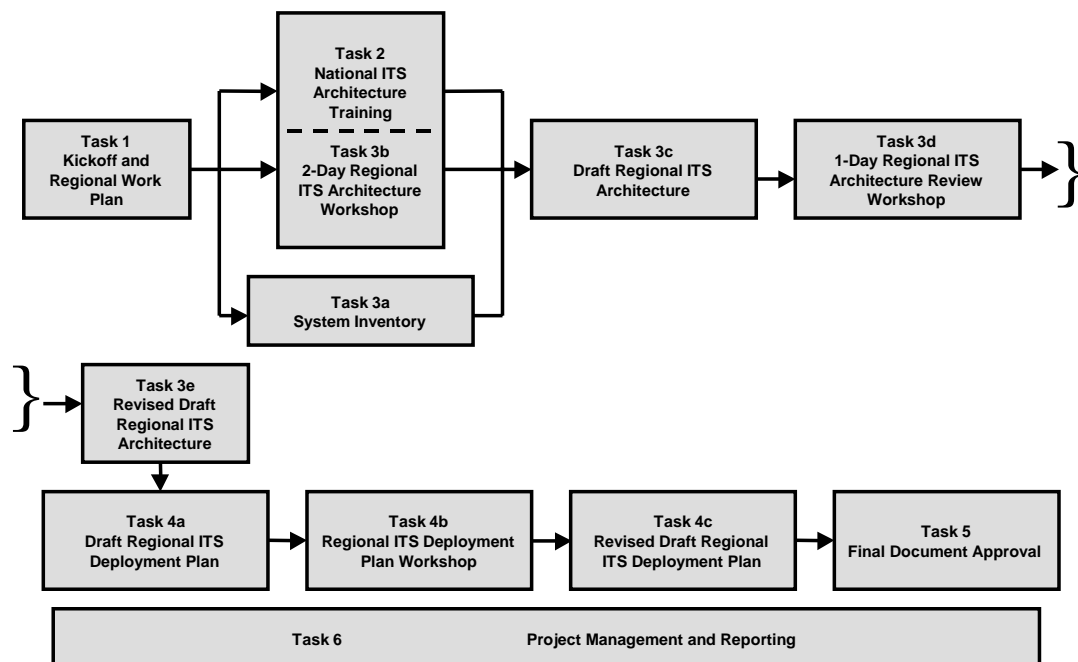
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## PROJECT APPROACH

The Federal Highway Administration (FHWA) issued a final rule to implement Section 5206(e) of the Transportation Equity Act for the 21st Century (TEA-21) in January of 2001. This final rule requires that Intelligent Transportation System (ITS) projects funded through the Highway Trust Fund conform to the National ITS Architecture and applicable standards. FHWA has further established a deadline of April 2005 for regions to have an ITS architecture in place.

To meet these requirements and ensure future federal funding eligibility for ITS, the Texas Department of Transportation (TxDOT) initiated the development of regional ITS architectures and deployment plans throughout the State of Texas. There are several metropolitan areas in the state that already have ITS architectures in place or under development. The focus of the State of Texas Regional ITS Architectures and Deployment Plans program is to develop architectures in those areas outside of the Austin, Houston, Dallas, Fort Worth, and San Antonio Regions. TxDOT expanded upon the ITS architecture requirements outlined in the FHWA Final Rule, and included an ITS deployment plan as part of the Regional efforts. The regional ITS architecture provides a framework for ITS systems, services, integration, and interoperability, and the regional ITS deployment plan identifies specific projects and timeframes for ITS implementation to support the vision developed by stakeholders in the architecture.

TxDOT's process for developing the regional ITS architectures and deployment plans followed a consensus-based approach to meeting the requirements in the FHWA Final Rule and supporting guidelines. This process was further tailored to meet the specific multi-agency needs of these Regional plans, and was structured around stakeholder input and involvement. The addition of an ITS deployment plan provides for a tangible road map for regional ITS deployment and integration. **Figure 1** shows the development process for each of the State of Texas Regional ITS Architectures and Deployment Plans.



**Figure 1 – Childress Regional ITS Architecture and Deployment Plan Development Process**

## OVERVIEW OF THE CHILDRESS REGION

The Childress Region is located in the eastern portion of the Texas Panhandle, and is bordered by the Amarillo District to the northwest, the Lubbock District to the southwest, and the Abilene District to the south. The Region shares its eastern borders with the state of Oklahoma and TxDOT's Wichita Falls District. Childress is a rural region comprised of 13 counties and several key cities and towns including Childress, Wellington, Shamrock, Quanah, Crowell, and Paducah. **Figure 2** illustrates the Regional boundaries.

The Childress Region is an important gateway to the Texas Panhandle, Oklahoma, and neighboring TxDOT Districts. Interstate 40 and US Highways 70, 83 and 287 are major corridors, and there also are several State Highways that serve as important links to US Highways and Interstates. US Highway 287 is a significant link between Colorado and Dallas/Fort Worth, which creates a major truck route through Childress and other communities along the corridor. It is also the primary route between Wichita Falls, Childress, and Amarillo, which makes coordination among these Regions extremely important. US Highway 83 is a north-south corridor in the eastern part of the Childress Region that connects to I-40 at Shamrock in Wheeler County, and further south US83 extends through Abilene to Laredo on the Texas/Mexico border. Transit services in the Region are available and are predominantly on-demand, although there are a few fixed-route schedules.

Currently, there is limited deployment of ITS in the Childress Region. Existing and planned near-term ITS technologies focus on detection, traveler information, and coordination with neighboring TxDOT Districts. US Highway 287 has Video Image Vehicle Detection (VIVD) and signal interconnect through Childress. The signal at US 287/SR256 also is equipped with emergency preemption. TxDOT operates and maintains all traffic signals within the Childress Region. TxDOT also has traffic counting stations at key points along I-40.



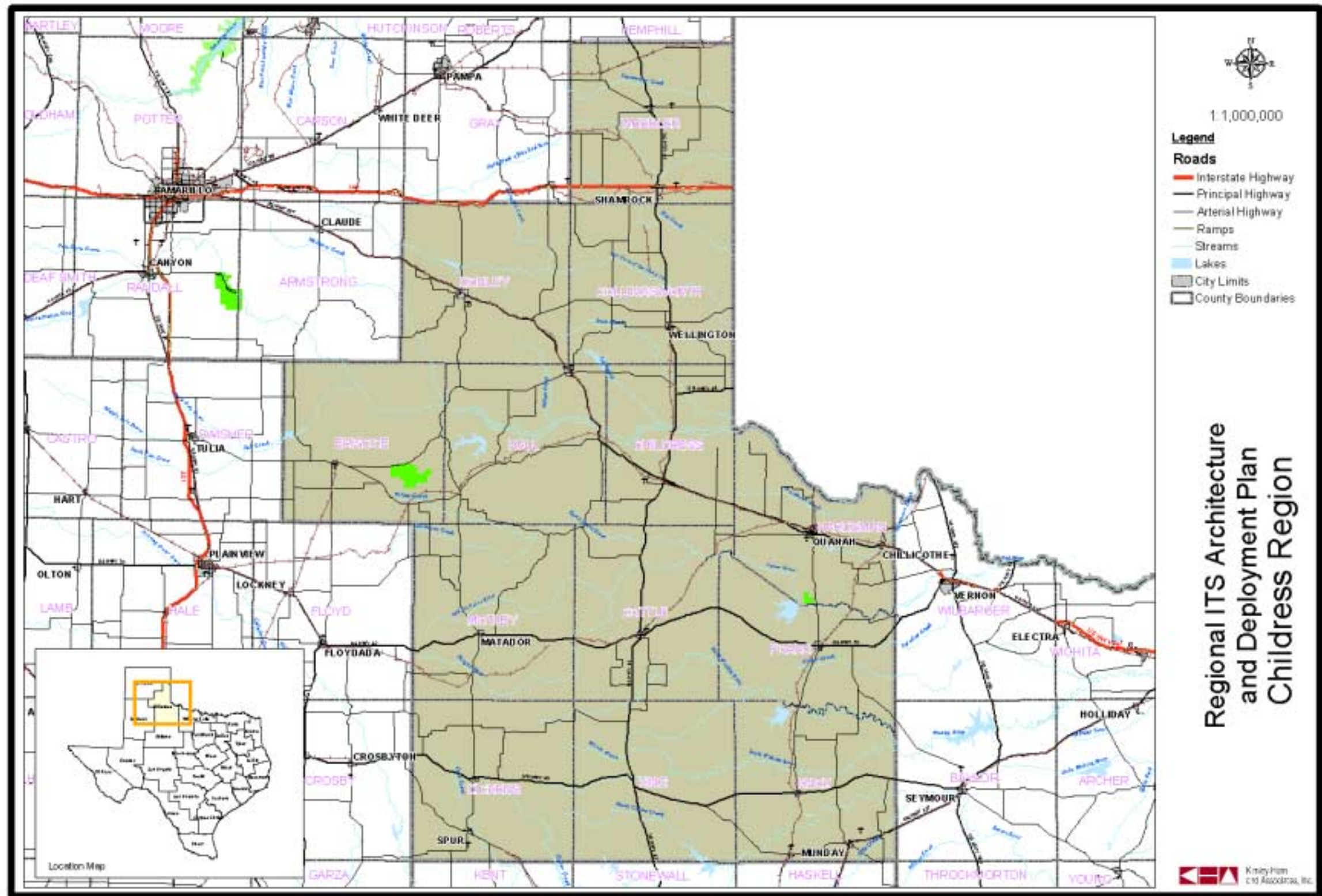


Figure 2 – Childress Region

## CHILDRESS REGION STAKEHOLDERS

Involving a range of perspectives in the development of a regional ITS architecture and deployment plan, and obtaining consensus on the vision and recommendations are key components to the process. Stakeholders from throughout the Childress Region and neighboring Regions participated in the development of the Childress Regional ITS Architecture and Deployment Plan. Key participants included representatives from TxDOT Childress, Amarillo and Wichita Falls Districts, cities, the Texas Department of Public Safety (TxDPS), and transit agencies. These stakeholders provided input and review at key steps in the development process, including a project kick-off meeting, architecture development and review workshops, a deployment plan workshop, and review of the final project documentation.

Childress Region stakeholders included:

- Childress County;
- City of Childress;
- Rolling Plains Management Corporation (Sharp Lines);
- City of Shamrock;
- Texas Department of Public Safety;
- TxDOT Abilene District;
- TxDOT Amarillo District;
- TxDOT Childress District;
- TxDOT Traffic Operations Division (Austin); and
- TxDOT Wichita Falls District.

## CHILDRESS REGIONAL ITS ARCHITECTURE

The process for developing the Regional ITS Architecture for Childress included several key steps:

- Preparing an inventory of planned and existing systems in the Region;
- Identifying needs in the Region that could be addressed by ITS deployment or integration;
- Customizing and prioritizing market packages to address the specific needs and services identified by stakeholders;
- Developing interconnects and interfaces for system elements to map out data flows and agency links;
- Preparing an operational concept to illustrate how the systems, components, and agencies will be integrated and function as a result of the architecture framework;
- Identifying high-level functional requirements;
- Identifying standards that could be applicable to the Childress Region; and
- Outlining potential agreements that would be needed to facilitate information or resource sharing as a result of ITS implementation.

### Inventory and Needs in the Region

The Childress Regional ITS Architecture began with a project kick-off meeting in July of 2002. At that meeting, stakeholders provided information about existing and planned ITS elements in the Region. A diverse range of needs were identified by stakeholders who attended. The highest priority needs focused on improving traveler information (particularly during hazardous weather and for closures of major routes), incident management during storms and winter weather, and enhancing coordination and communication among west Texas TxDOT Districts. The inventory of planned and existing ITS infrastructure provided the basis for the architecture development. Needs that could be addressed by ITS technologies guided the selection of market packages, data flows, and integration requirements.

The needs identified by the Childress Region stakeholders were categorized into functional areas, and are shown in **Table 1**.



**Table 1 – Childress Region: Summary of ITS Needs**

**Childress Region  
Summary of ITS Needs  
Childress Regional ITS Architecture and Deployment Plan Kick-Off Meeting  
July 30, 2002**

**Institutional Issues/Needs**

- Need better/enhanced communication and information sharing among Districts, cities, counties, law enforcement, etc.
- Need better outreach to rural areas to participate in regional ITS planning and programs
- Need policies for using dynamic message signs, standardized messages, and types of messages
- Need compatibility among west Texas Districts

**Traffic Management Needs**

- Need detours for weather and emergencies – there are currently no standard detour plans to re-route traffic in the event of a major incident or closure
- Need weather detection and notification systems (currently there are no Road Weather Information Systems in the Childress District). Childress and surrounding counties are coordinating for a grant to get a NOAA transmitter.

**Traveler Information Needs**

- Need permanent DMS (I-40, US 287, and other major routes) in advance of key decision points and alternate routes
- Need to equip DMS with closed-circuit television (to verify messages) and with flashing warning lights
- Need permanent Highway Advisory Radio (HAR) transmitters (along I-40 and US 287) at key decision points and in advance of alternate routes
- Need to coordinate with Amarillo HAR along I-40
- Need 511 for travel information
- Need to communicate current road condition and safety messages to motorists
- Need DMS or large screen kiosks at rest areas to inform truckers and motorists of conditions, closures, etc.

**Data Needs (Collecting, Sharing)**

- Need center-to-center communications and shared use of field equipment
- Need shared viewing of weather/incident information among the Districts
- Need to expedite sharing and dissemination of accident data (DPS database); need automated reporting and storage of information

**Public Transportation Management Needs**

None identified

**Electronic Payment Needs**

None identified

**Commercial Vehicle Operations Needs**

- Need weigh-in-motion on I-40 so weigh stations can flag specific vehicles

**Table 2 – Childress: Summary of ITS Needs (continued)**

<p><b>Emergency Management Needs</b></p> <ul style="list-style-type: none"> <li>▪ Need preemption on all signals for fire and police</li> <li>▪ Need to enhance current regional emergency operations center (currently located at TxDPS in Childress)</li> <li>▪ Need better information sharing and coordination among emergency and traffic management (ambulance, helicopter, hospital)</li> <li>▪ Need to provide DPS, sheriff, police and fire access to data</li> <li>▪ Need automatic vehicle location (AVL) on DPS vehicles</li> <li>▪ Need a mobile emergency ops/incident management center with mobile communications capabilities (similar to Forest Service)</li> </ul> <p><b>Advanced Vehicle Safety Systems Needs</b></p> <p>None Identified</p> <p><b>Information Management Needs (Data Archiving)</b></p> <p>None identified – data needs have been covered in other categories</p> <p><b>Maintenance and Construction Management Needs</b></p> <ul style="list-style-type: none"> <li>▪ Need AVL on TxDOT maintenance vehicles</li> <li>▪ Need automated road condition detection, warning and treatment systems (such as anti-icing)</li> </ul> <p><b>Other Needs</b></p> <ul style="list-style-type: none"> <li>▪ Need video/security systems at rest areas and roadside parks – (currently at some rest areas)</li> <li>▪ Need flood detection and warning systems</li> </ul>
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## Market Packages

A 2-Day ITS Architecture Workshop was held in Childress in October 2002. At this workshop, stakeholders were provided with architecture training, including background information about the National ITS Architecture, the purpose and benefits of a regional ITS architecture, as well as the process that would be used to develop the Childress Regional ITS Architecture.

The next step in developing the Childress Regional ITS Architecture was to identify the services that would be needed to address the stakeholder needs. In the National ITS Architecture, services are referred to as market packages. Market packages may include several stakeholders and elements that work together to provide a service in the Region. Examples of market packages from the National ITS Architecture include Network Surveillance, Traffic Information Dissemination, and Transit Vehicle Tracking. There are currently a total of 75 market packages identified in the National ITS Architecture.

At the 2-Day ITS Architecture Workshop, stakeholders selected the market packages that corresponded to the desired services and functions identified for the Region, and then customized these market packages. They included services and functions such as Network Surveillance, Road Weather Data Collection, Emergency Response, and Winter Maintenance as well as market packages to address coordination needs, including an Incident Management System and Regional Traffic Control and Coordination. Because market packages are groups of services and functions, they can be deployed incrementally and over time. Of the 75 market packages in the National ITS Architecture, stakeholders identified 30 as being applicable to the Childress Region.

## Interconnects, Interfaces, and Standards

Stakeholders also began the process of mapping existing and planned ITS elements in Childress to the subsystems in the National ITS Architecture. These elements included agencies, systems, and essentially all of the ITS components in the Region. Subsystems are the highest level building blocks of the physical architecture, and the National ITS Architecture groups them into four major classes: Centers, Roadside, Vehicles, and Travelers. This mapping resulted in an interconnect diagram for the Childress Region, which is shown in **Figure 3** on the following page. This architecture diagram, also referred to as the “sausage diagram” shows the relationship of existing, planned, and future systems in the Childress Region.

The market packages in the National ITS Architecture were customized to reflect the unique systems, subsystems, and terminators in the Childress Region. Each market package was shown graphically, with the market package name, Childress specific element, and the unique agency and system identifiers within the subsystems and terminators.

**Figure 4** is an example of an ATMS market package for Standard Railroad Grade Crossings that has been customized for the Childress Region. This market package shows the two subsystems (Traffic Management and Roadway), and the associated entities (Rail Operators Wayside Equipment). Data flows between the subsystems and the terminators (Wayside Equipment) indicate what information is being shared. The solid data flow lines in this market package indicate existing information flows and the dashed lines indicate planned or future flows. All of the Childress Region market package diagrams are included in the Regional ITS Architecture report.

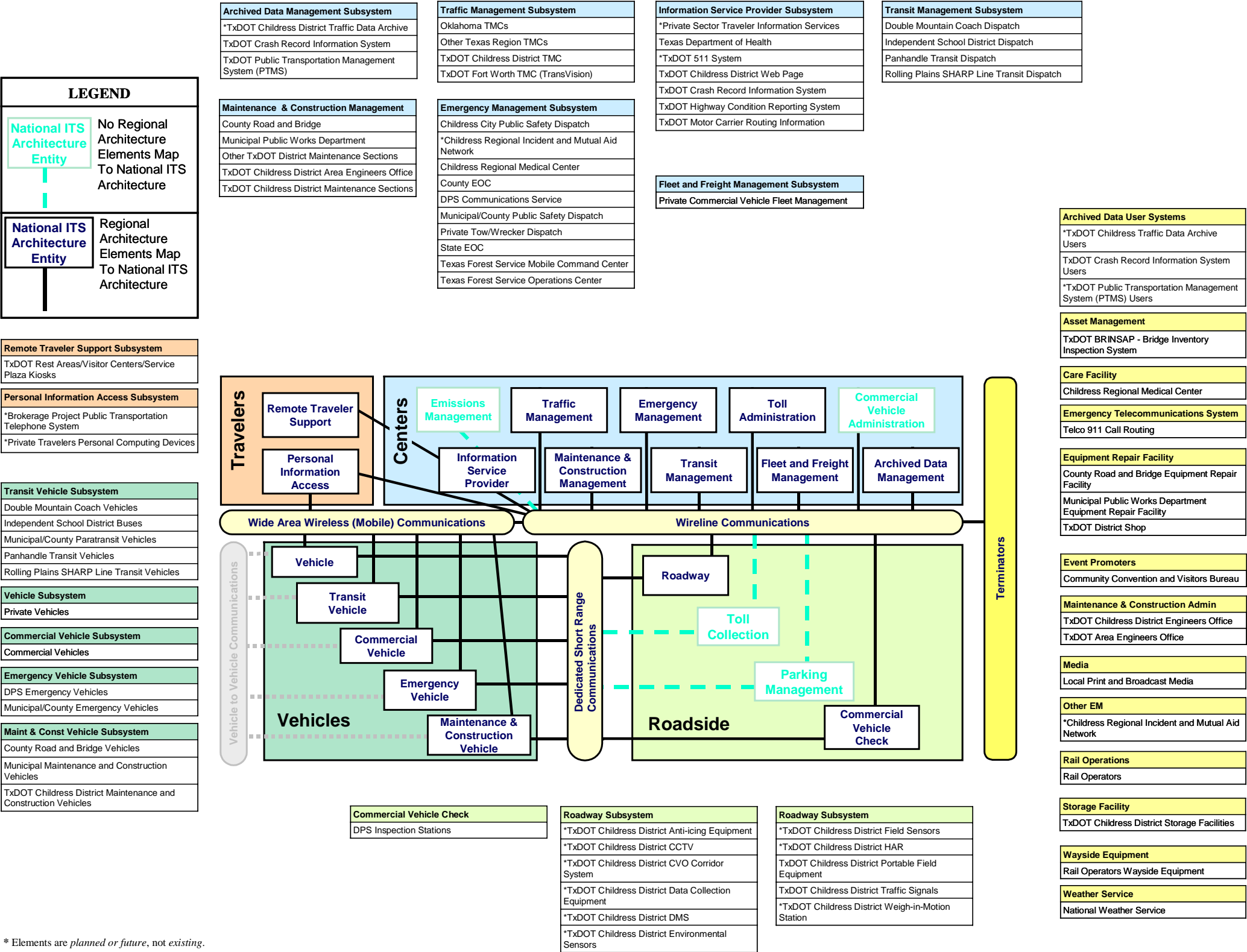
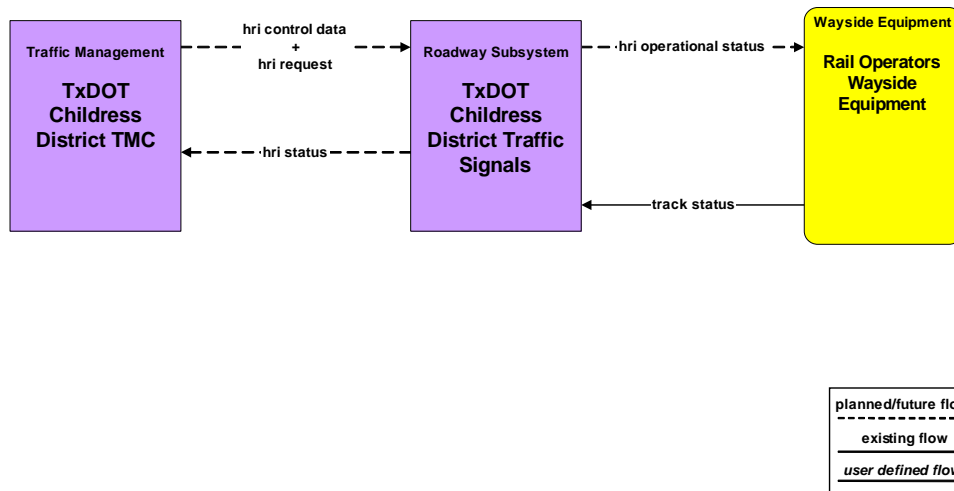


Figure 3 – Childress Regional System Interconnect Diagram



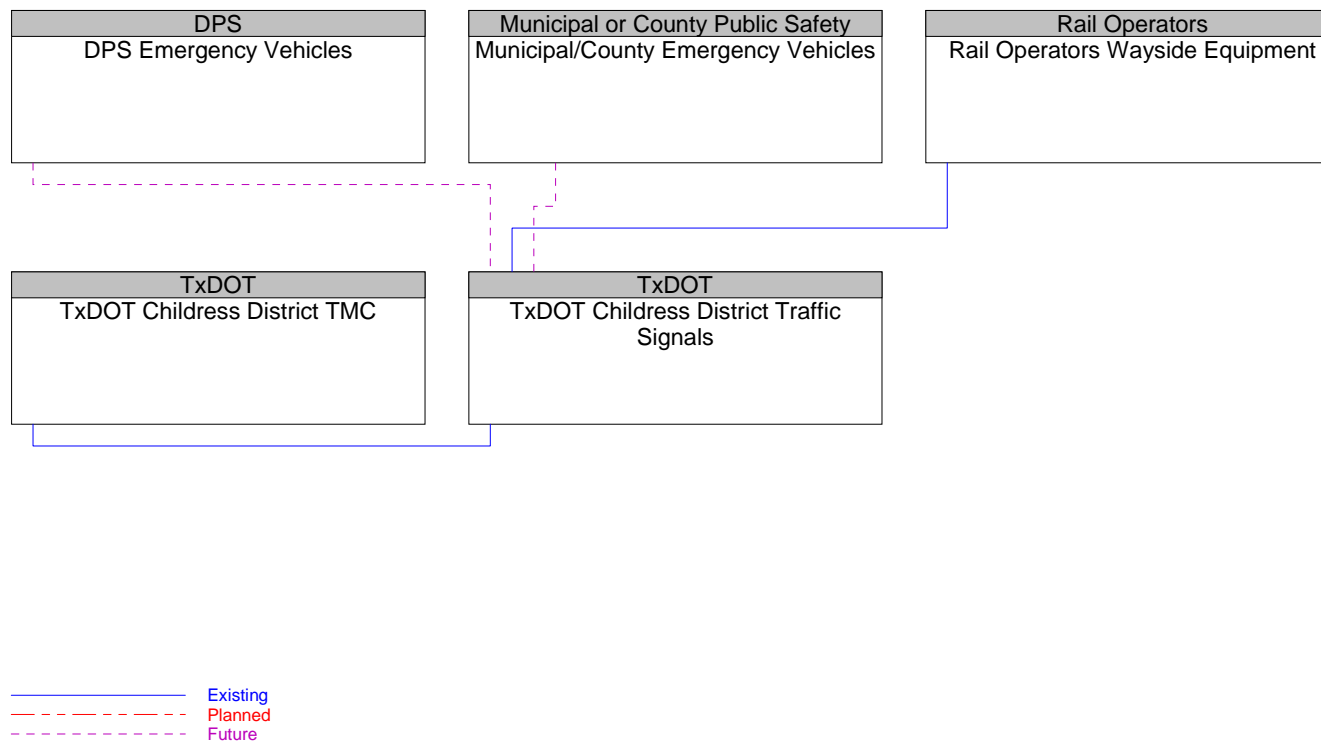
**Figure 4 – Childress Standard Railroad Grade Crossing Customized Market Package**

More detailed interfaces were developed which identified the connectivity between the systems and elements. Each element identified in the ITS architecture for the Childress Region was mapped to the other elements that it must interface with. These interfaces were further defined by architecture data flows between individual elements that specify the information to be exchanged. The data flows include requests for information, alerts and messages, status requests, confirmations, and other information requirements.

While it is important to identify the various systems and stakeholders as part of a regional ITS, a primary purpose of the architecture is to identify the connectivity between transportation systems in the Childress Region. There are 72 different elements identified as part of the Childress Regional ITS Architecture. These elements include local and state traffic management/operations centers, transit vehicles, dispatch systems, emergency management agencies and others – essentially, all of the existing and planned physical components that contribute to a Regional ITS. Interfaces have been identified for each element in the Childress Regional ITS Architecture, and each element has been mapped to those other elements with which it must interface.

An example of one of the system interfaces is included as **Figure 5**. This graphic shows the TxDOT Childress District traffic signals and the existing and planned interfaces with other elements throughout the Region. These interfaces are shown as existing, planned, or future. Interfaces defined as planned have funding identified, while future interfaces are desired by stakeholders but funding has not yet been identified.

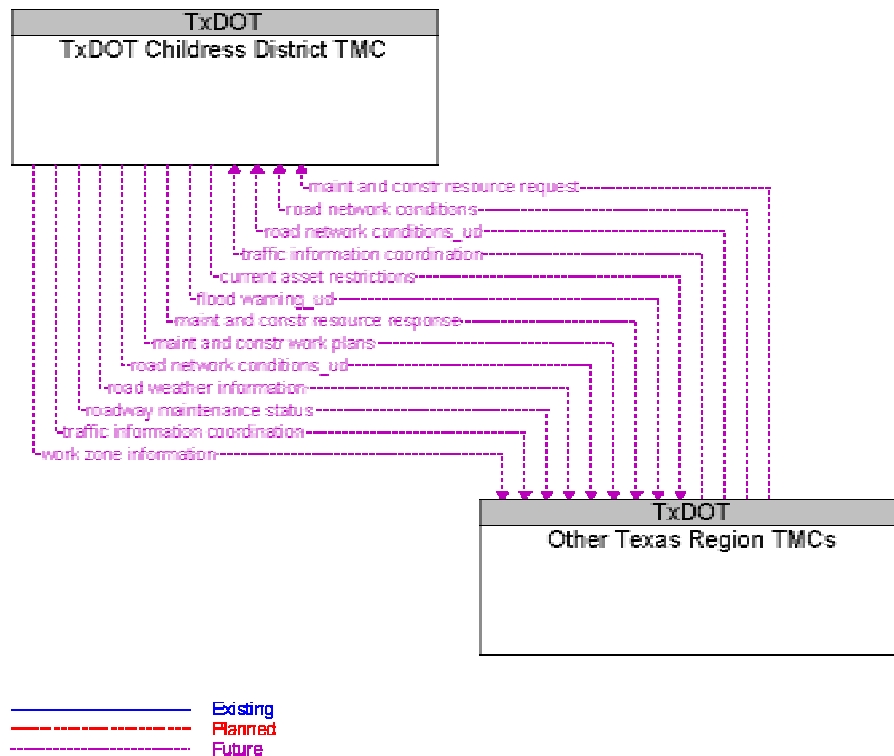
Architecture flows between the subsystems and terminators define the specific information (data) that is exchanged between subsystems and terminators. Each architecture flow has one or more data flows that specify what information is exchanged and the direction of the exchange.



**Figure 5 – TxDOT Childress District Traffic Signals Interfaces**



An example of the architecture flows between two elements is shown in **Figure 6**. In this interface, the flows between the TxDOT Childress District TMC and other Texas Region TMCs show information that must go from the Childress District TMC to other Texas TMCs, as well as information that the TMC needs from devices. Similar to the interfaces, architecture flows also are defined as existing, planned, or future. All of the architecture flows between elements have been included on the project website.



**Figure 6 – TxDOT Childress District TMC to Other Texas Region TMCs Architecture Flows**

With the required interfaces and interconnections identified, standards that could potentially be applied to the Childress Region were identified. Standards are an important tool that will allow efficient implementation of the elements in the Childress Regional ITS Architecture over time. They facilitate deployment of interoperable systems at local, regional, and national levels without impeding innovation as technology advances, vendors change, and as new approaches evolve.

### Operational Concept and Scenarios

An operational concept for the Childress Region was developed as part of the architecture process to illustrate how systems, components, and agencies will be integrated and function as a result of the framework provided by the Regional ITS Architecture. For the Childress Region, two concepts were illustrated. The first was a train derailment near US287. The operational concept shows through ITS deployment, emergency response, agency connectivity and information sharing, and traveler information tools, that agencies are able to work together and benefit from the technologies and systems in place to proactively manage the Region's transportation system in the event of such an incident on one of the Region's primary corridors. The second concept

illustrates a sequence of events during a major winter storm and how TxDOT, emergency services, public safety, and other key agencies can put pre-determined response and diversion strategies into effect, as well as utilize technology and communications infrastructure, to respond effectively and increase motorist safety during hazardous winter weather.

## Agreements

Interfaces and data flows among public and private entities in the Childress Region will require agreements among agencies that establish parameters for sharing agency information to support traffic and incident management, provide traveler information, and perform other functions identified in the Regional ITS Architecture. Recommended projects will result in systems and interfaces that will require inter-agency agreements, both public and private, to facilitate the exchange of information.

Currently, there are no formal agreements in place in the Childress Region. Stakeholders indicated that while there is a high degree of cooperation among agencies, there hasn't been a need for formal agreements to facilitate multi-jurisdictional resource sharing, cooperation, or mutual aid. With the implementation of ITS technologies, integration of systems from one or more agencies, and the anticipated level of information exchange identified in the architecture, it is likely that more formal agreements will be needed.

The following is a list of potential agreements for the Childress Region based on the interfaces identified in the Regional ITS Architecture and recommended ITS projects in the Deployment Plan:

- Data sharing and usage agreements among public agencies;
- Data sharing and usage agreements among public and private media and information service providers;
- Shared video monitoring agreements between TxDOT and public safety agencies; and
- Mutual aid agreements among public sector agencies, primarily fire, police, emergency services, DPS, Forest Service and TxDOT.

It is important to note that as ITS services and systems are implemented in the Region, part of the planning and review process for those projects should include a review of potential agreements that would be needed for implementation or operations.

## ITS Architecture Documentation

The Regional ITS Architecture for the Childress Region is documented in a final report. Stakeholders were brought together to review the Regional ITS Architecture and provide feedback. The final report was not prepared until after completion of the Childress Regional ITS Deployment Plan, to allow for modifications based on information and input received for the ITS Deployment Plan recommendations.

A website with all of the Regional ITS Architecture also was maintained. The website allowed stakeholders to review the architecture and provide comments directly to the project team through the website. At the time this report was published, the Childress Regional ITS Architecture website was being hosted at [www.consystec.com](http://www.consystec.com). The site can be accessed by selecting the link to Texas, and then the link to Childress. TxDOT plans to permanently host the site in the future at [www.dot.state.tx.us/trf/its](http://www.dot.state.tx.us/trf/its).

## CHILDRESS REGIONAL ITS DEPLOYMENT PLAN

Although development of an ITS deployment plan was not required by the FHWA Final Rule for the architecture, the Final Rule does request a sequence of projects required for implementation. Capitalizing on the momentum and interagency dialogue established during the development of the Childress Regional ITS Architecture, TxDOT chose to expand on the project sequence requirement to develop a formal ITS deployment plan for the Region.

The Childress Regional ITS Architecture provided the framework and prioritized the key functions and services desired by stakeholders in the Region. The Childress ITS Deployment Plan builds on the architecture by prioritizing market packages, outlining specific ITS project recommendations and strategies for the Region, and identifying deployment timeframes so that the recommended projects and strategies can be implemented over time. Agency responsibilities for implementing and operating the systems also are a key component of the ITS Deployment Plan.

### Prioritized Market Packages

Market packages for the Childress Region previously identified as part of the architecture were categorized into high, medium, and low priorities by stakeholders. The market package prioritization was a key factor in developing recommendations for ITS deployment and integration in the Childress Region. These priorities identified the key needs and services that are desired in the Region, as well as the interfaces that need to be established to provide integrated functionality and establish communication between elements.

It is important to note that the high, medium, and low priorities were not directly related to anticipated deployment timeframes (such as 5, 10, or 20 year deployment horizon). For example, a market package can be a high priority, but because of funding or prerequisite project requirements, it might not be feasible for deployment for several years. Maturity and availability of technology was another factor for prioritizing the market packages. Because market packages often represent groups of technologies or services to deliver a particular functionality, certain components of the market package could be identified as a high priority or existing capability, while other components would have a lower priority. Other considerations included whether or not the market package was better suited for deployment and operations by the private sector rather than public agencies in the Region.

**Table 2** shows the prioritization of the selected market packages for the Childress Region. The majority of these market packages fall into the high priority category. This category also includes market packages (or portions of market packages) that are already deployed in the Childress Region, such as network surveillance, surface street control, and traffic information dissemination.

**Table 2 – Summary of Prioritized Market Packages for the Childress Region**

High Priority	Medium Priority	Low Priority
<ul style="list-style-type: none"> <li>▪ Network Surveillance</li> <li>▪ Traffic Information Dissemination</li> <li>▪ Regional Traffic Control</li> <li>▪ Incident Management System</li> <li>▪ Road Weather Data Collection</li> <li>▪ Weather Information Processing and Distribution</li> <li>▪ Transit Vehicle Tracking</li> <li>▪ Demand Response Transit Operations</li> <li>▪ Transit Traveler Information</li> <li>▪ Broadcast Traveler Information Systems</li> <li>▪ Interactive Traveler Information</li> <li>▪ HAZMAT Management</li> <li>▪ Emergency Response</li> <li>▪ Emergency Routing</li> <li>▪ ITS Data Mart</li> </ul>	<ul style="list-style-type: none"> <li>▪ Surface Street Control</li> <li>▪ Standard Railroad Grade Crossing</li> <li>▪ Railroad Operations Coordination</li> <li>▪ Roadway Automated Treatment</li> <li>▪ Winter Maintenance</li> <li>▪ Work Zone Management</li> <li>▪ Transit Fixed-Route Operations</li> <li>▪ Transit Security</li> <li>▪ Weigh-in-Motion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Probe Surveillance</li> <li>▪ Maintenance and Construction Vehicle Tracking</li> <li>▪ Maintenance and Construction Vehicle Maintenance</li> <li>▪ Work Zone Safety Monitoring</li> <li>▪ Maintenance and Construction Activity Coordination</li> <li>▪ ISP-Based Route Guidance</li> </ul>

Each of the prioritized market packages was assessed from the perspective of deployment status (which components, if any, were already existing in the Region), as well as any planned or additional new needs to bring the market package to the desired level of functionality in the Childress Region. Each market package analysis included:

- A brief definition of the market package (modified from the National ITS Architecture definitions);
- Any infrastructure or components from that market package that is already existing in the Childress Region;
- Agencies currently operating or maintaining systems that apply to that market package;
- Planned projects that will address some or all of the services that are contained in the market package; and
- Any additional needs to bring the market package to the desired level of deployment or functionality.

## ITS Project Recommendations for the Childress Region

Using the needs, market package priorities, and any planned projects identified by the stakeholders during the architecture process, a list of recommended ITS projects for the Childress Region was developed. These projects were refined and additions and deletions were made by the Regional stakeholders at the ITS Deployment Plan Workshop in February 2003.

Recommended ITS projects for the Childress Region were categorized into short-, medium-, and long-term timeframes for programming in the 5, 10, and 20 year horizons. This was done based on current status if the project had previously been identified and planned by the Region, market package priority, and dependency on other project completions. The majority of the short term or 5-year recommendations serve as “foundation” projects to implement basic functionality, infrastructure, and interfaces, with the intent of continuing to build out those foundation projects over the 10 and 20 year timeframes. Most projects for the Childress Region are infrastructure based; however, there are some recommendations that focus more on institutional practices and interconnectivity to enhance coordination and communications.

Each recommended project for the Childress Region was included in a short-, medium-, or long-term table. These tables provided the name of the project, primary operating/implementing agency, a planning level estimate of probable cost, an indication of whether or not funding had been identified for that specific project, and an estimated project duration. Following each table, detailed descriptions of each project were developed, which also included associated market packages and any pre-requisite project requirements.

**Table 3** summarizes the ITS projects recommended for the Childress Region. This summary is divided into the major program areas and subdivided by timeframe. As can be seen from this summary, the majority of the project recommendations focus on the Travel and Traffic Management category, which would implement surface street traffic management, traveler information, and inter-agency coordination elements.

**Table 3 – Recommended ITS Projects for the Childress Region**

Project Time Frame	Project Name	Funding Identified (Funding Agency if Applicable)
<b><i>Travel and Traffic Management</i></b>		
Short Term Projects 5-year Horizon	TxDOT Childress District TMC	No
	TxDOT ATMS Implementation	N/A
	TxDOT Childress ITS Implementation Phase 1	No
	TxDOT Childress Portable DMS	No
	TxDOT Rest Area Traveler Information	No
	TxDOT Center-to-Center Communications (Statewide)	Yes (TxDOT)
	TxDOT Flood Detection Stations	No
	TxDOT Childress District Web Page	No

**Table 3 – Recommended ITS Projects for the Childress Region (continued)**

Project Time Frame	Project Name	Funding Identified (Funding Agency if Applicable)
<b><i>Travel and Traffic Management (continued)</i></b>		
Mid Term Projects 10-year Horizon	TxDOT Childress ITS Implementation Phase 2	No
	TxDOT Childress Area Office Remote TMC Workstations	No
	Regional 511 Advanced Traveler Information System Server	No
	TxDOT Childress Closed Loop Signal System Upgrade	No
	TxDOT Childress TMC/Municipal Public Works Connections	No
	TxDOT Childress TMC/County Road and Bridge Connections	No
	Interstate TMC Coordination	No
	Railroad Crossing Upgrades	No
	TxDOT Childress Portable Traffic Detection	No
Long Term Projects 20-year Horizon	TxDOT Childress ITS Implementation Phase 3	No
	ISP-Based Route Guidance Support	No
	Probe Surveillance	No
<b><i>Emergency Management</i></b>		
Short Term Projects 5-year Horizon	Regional Emergency Operations Center (EOC) Enhancements	No
	TxDOT Childress TMC to Regional EOC Connection	No
	DPS Childress Computer Aided Dispatch System	No
	Emergency Vehicle Traffic Signal Preemption	No
Mid Term Projects 10-year Horizon	Emergency Vehicle AVL	No
	TxDOT Childress TMC/City of Childress Police Department Connection	No
	TxDOT Childress TMC/County EOC Connection	No
Long Term Projects 20-year Horizon	None Identified	No
<b><i>Maintenance and Construction Management</i></b>		
Short Term Projects 5-year Horizon	TxDOT Childress Highway Condition Reporting System (HCRS) Enhancements	Yes (TxDOT)
	TxDOT Childress RWIS Phase 1	No
Mid Term Projects 10-year Horizon	TxDOT Childress Portable Smart Work Zones	No
	TxDOT Childress Winter Maintenance Decision Support System	No
	TxDOT Childress Automated Anti-Icing Treatment	No



**Table 3 – Recommended ITS Projects for the Childress Region (continued)**

<b>Project Time Frame</b>	<b>Project Name</b>	<b>Funding Identified (Funding Agency if Applicable)</b>
<b><i>Maintenance and Construction Management (continued)</i></b>		
Long Term Projects 20-year Horizon	TxDOT Childress RWIS Phase 2	No
	TxDOT Childress Maintenance Vehicle AVL	No
	TxDOT Childress Maintenance Vehicle Diagnostics	No
	Municipal and County Maintenance Vehicle AVL	No
	Municipal and County Maintenance Vehicle Diagnostics	No
<b><i>Public Transportation Management</i></b>		
Short Term Projects 5-year Horizon	Sharp Lines Transit Operations Center with Computer Aided Dispatch	No
	Sharp Lines Automatic Vehicle Location System	No
	Panhandle Community Services Automatic Vehicle Location System	No
Mid Term Projects 10-year Horizon	Sharp Lines Transit Security Cameras and Alarms	No
	Panhandle Community Transit Security Cameras and Alarms	No
	Rolling Plains Transit Traveler Information System	No
Long Term Projects 20-year Horizon	Childress Region Independent School Districts Bus AVL	No
	Childress Region Independent School Districts Bus Operations Management Center	No
<b><i>Information Management</i></b>		
Short Term Projects 5-year Horizon	None Identified	No
Mid Term Projects 10-year Horizon	TxDOT Childress Traffic Count Archive	No
Long Term Projects 20-year Horizon	None Identified	No
<b><i>Commercial Vehicle Operation</i></b>		
Short Term Projects 5-year Horizon	HAZMAT Notification System	No
Mid Term Projects 10-year Horizon	TxDOT Childress Weigh-in-Motion (WIM) Site Implementation	No
Long Term Projects 20-year Horizon	None Identified	No

## **MAINTAINING THE REGIONAL ITS ARCHITECTURE AND DEPLOYMENT PLAN**

With the substantial amount of effort invested by stakeholders in the Childress Region to develop both the Regional ITS Architecture and the ITS Deployment Plan, developing a strategy for maintaining these important tools was a key component of the process.

New market packages are added to the National ITS Architecture every few years, and with the increasing emphasis on homeland security issues, it is envisioned that there will be additional market packages focused on addressing homeland security and emergency management. New federal initiatives, such as Amber Alert and 511, could also generate new or updated categories of market packages within the National ITS Architecture. Childress stakeholders agreed that it would be beneficial to review any modifications to the National ITS Architecture as well as any USDOT/FHWA guidance on an as-needed basis, and identify any additions or modifications that should be considered for the Childress Regional ITS Architecture.

As deployment and integration progress in the Childress Region, stakeholders that were not involved in developing the initial architecture and deployment plan might have a more vested interest or role in ITS in the Region. Stakeholders agreed that new or additional stakeholders also should be added to future review discussions if appropriate.

At the Comment Resolution Meeting held in Childress in June 2003, stakeholders agreed that both the Regional ITS Architecture and the ITS Deployment Plan will need to be periodically updated in order to reflect current deployment status as well as re-evaluate priorities. A two-year timeframe was selected by the stakeholders for this update to correspond with the Transportation Improvement Plan (TIP) updates and the biannual Texas Legislature meetings. The TxDOT Childress District was identified as the agency that should take the lead in maintaining and updating the Region's ITS Architecture and Deployment Plan, with support and input from other stakeholders in the Region.

## MEMORANDUM OF UNDERSTANDING

As a final step in the development of the Childress Regional ITS Architecture and Deployment Plan, a Memorandum of Understanding (MOU) was prepared for the participating stakeholder agencies. The MOU was developed for stakeholders to acknowledge their participation and approval of the plan, and pledge their support in the implementation and operation of intelligent transportation systems in the Childress Region. Also included in the MOU was a pledge to provide TxDOT with the information necessary to maintain the Regional ITS Architecture and ITS Deployment Plan.

Although there were a number of other very important stakeholders participating in the project, those stakeholders that were asked to sign the MOU represented agencies that will have the greatest impact in the Region in terms of ITS deployments and system operations. Childress is a relatively small Region in terms of stakeholders. TxDOT has primary responsibility for the majority of transportation infrastructure in the Region, and as a result, the majority of the stakeholders that participated represented various groups within TxDOT, including maintenance, traffic operations, public transportation, Area Offices and neighboring Districts. Stakeholder agencies that were asked to sign the MOU for the Childress Regional ITS Architecture and Deployment Plan included the following:

- City of Childress;
- Rolling Plains Management Corporation (Sharp Lines); and
- Texas Department of Transportation.